

ABSTRACT OF THE DISCLOSURE

A process produces ϵ -caprolactone by the oxidation of cyclohexanone by feeding a crude reaction mixture to a first distillation column; distilling off a first distillate containing low boiling components including unreacted cyclohexanone from the top of the first distillation column; recovering a first side-cut fraction containing unreacted cyclohexanone in a higher concentration than in the first distillate from an intermediate tray; recovering a first bottom liquid containing high boiling components including ϵ -caprolactone from the bottom; introducing the first side-cut fraction to a second distillation column; recovering a second bottom liquid containing unreacted cyclohexanone from the bottom of the second distillation column; recycling the second bottom liquid into the raw material cyclohexanone; introducing the first bottom liquid to a third distillation column to thereby yield a third distillate containing ϵ -caprolactone from the third distillation column.